

Fort Peck Fisheries

Shop Building Fort Peck, Montana



Montana Fish,
Wildlife & Parks

DRAWING INDEX

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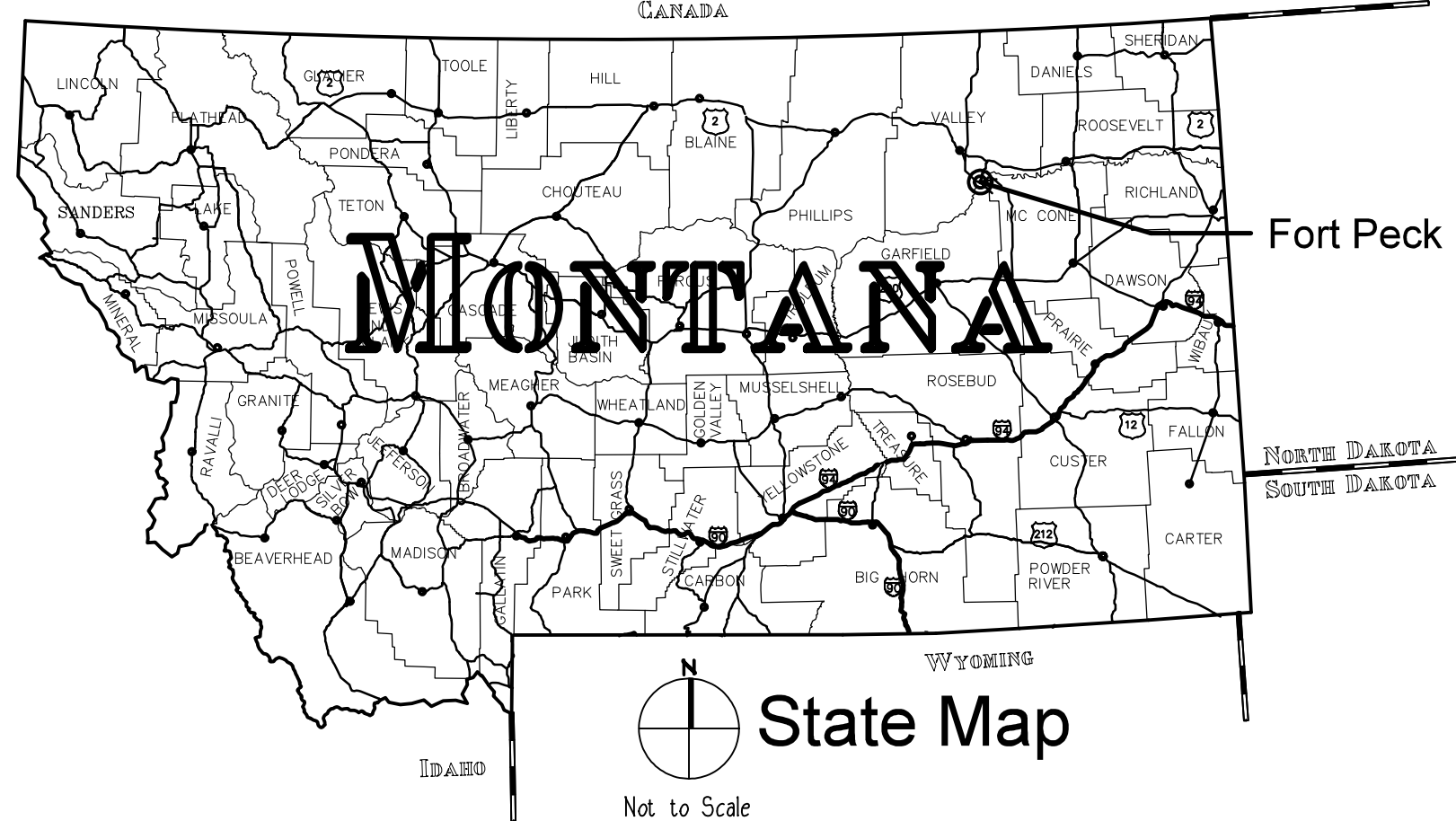
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Fort Peck Map



State Map

DWG SET #:

OWNER:

MT FISH, WILDLIFE & PARKS — DESIGN & CONSTRUCTION BUREAU
PO BOX 200701
HELENA, MT 59620-0701
406 841 4000

BUILDING DEPARTMENT:

DEPT OF LABOR & INDUSTRY — BUILDING CODES DIVISION
INSPECTOR: YANCY BESTON
PO BOX 200517
HELENA, MT 59620-0517
406 841 2040

ARCHITECT:

STEVENSON DESIGN, INC.
909 MAIN STREET
MILES CITY, MT 59301
406 234 0777
406 234 8777

MECHANICAL/ELECTRICAL ENGINEER:

SIMPLICITY CED, LLC
PO BOX 51272
BILLINGS, MT 59105
406 254 7157

BUILDING CODES: IBC 2009
BUILDING OCCUPANCY S-1
TYPE OF CONSTRUCTION: V-B
ALLOWABLE AREA/HEIGHT TABLE 503 9,000 S.F. & 1 STORY @ 40'

ACTUAL AREA/HEIGHT: 2304 S.F. FLOOR & 1 STORY @ 22' HEIGHT
OCCUPANT LOAD PER TABLE 1004.1.1 2,304/300 = 7

REQUIRED EGRESS WIDTHS TABLE 1005.1
OTHER EGRESS COMPONENTS .2 IN./OCCUPANT 36" MINIMUM / 36" PROVIDED

MAXIMUM TRAVEL DISTANCE TO EXIT TABLE 1016.1 200 FT.
ACTUAL MAXIMUM TRAVEL DISTANCE = 80 FT.

NUMBER OF EXITS REQUIRED TABLE 1015.1 1
NUMBER OF EXITS PROVIDED = 1

CORRIDOR FIRE RESISTANCE RATING 1018.1 0 Hr.

FIRE RESISTANCE RATINGS FOR BUILDING ELEMENTS TABLE 601

STRUCTURAL FRAME 0 HR.
BEARING WALLS — EXTERIOR 0 HR.
BEARING WALLS — INTERIOR 0 HR.
NON-BEARING WALLS — EXTERIOR 0 HR.
NON-BEARING WALLS — INTERIOR 0 HR.
FLOOR CONSTRUCTION 0 HR.
ROOF CONSTRUCTION 0 HR.

MINIMUM ROOF COVERING CLASSIFICATION TABLE 1505.1 CLASS "C"

PLUMBING CODE: UPC 2009

MECHANICAL CODE: IMC 2009

ELECTRICAL CODE: NEC 2008

ABBREVIATIONS

@ AT
A.B. ANCHOR BOLT
A.F.F. ABOVE FINISHED FLOOR
ALT. ALTERNATE
ALUM. ALUMINUM
BM BEAM
B.U. BUILT UP
CL. CENTER LINE
CDX EXTERIOR GRADE PLYWOOD
CLG. CEILING
CLR. CLEAR
CMU CONCRETE MASONRY UNIT
COL. COLUMN
CONC. CONCRETE
CONT. CONTINUOUS
CSK. COUNTERSINK
DBL. DOUBLE
DIA. or Ø DIAMETER
DIM. DIMENSION
DN. DOWN
D.S. DOWNSPOUT
DWG. DRAWING
EPS. EXPANDED POLYSTYRENE
EA. EACH
EIFS. EXTERIOR INSULATION FINISH SYSTEM

E.C. ELECTRICAL CONTRACTOR
E.J. EXPANSION JOINT
ELEV. ELEVATION
ELEC. ELECTRICAL
EPS. EXPANDED POLYSTYRENE
EQ. EQUIPMENT
ESB. EQUIPMENT STORAGE
EXIST. EXISTING
EXP. EXPANSION
EXT. EXTERIOR
FLR. FLOOR
F.C. FACE OF CONCRETE
GALV. GALVANIZED
GA. GAUGE
G.C. GENERAL CONTRACTOR
G.W.B. GYPSUM WALL BOARD
HVAC HEATING, VENTILATION, AIR CONDITIONING
HWY. HIGHWAY
INFO. INFORMATION
INS. INSULATION
IWP. INSULATED WALL PANEL
LB. POUND
LVL. LAMINATED VENEER LUMBER

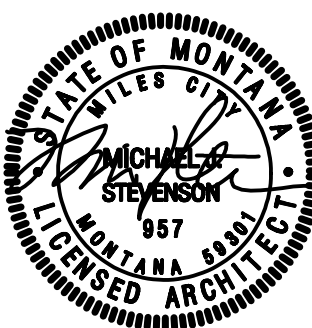
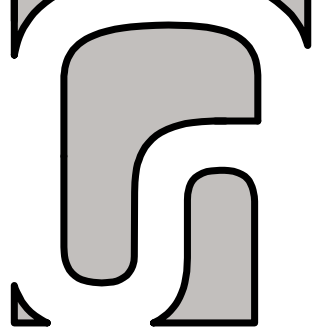
M.C. MECHANICAL CONTRACTOR
MFR. MANUFACTURER
MAX. MAXIMUM
MBM. METAL BUILDING MANUFACTURER
MECH. MECHANICAL
MIN. MINIMUM
MISC. MISCELLANEOUS
M.O. MASONRY OPENING
MPWSS. MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
MT. MONTANA
NO. or # NUMBER
N.T.S. NOT TO SCALE
O.C. ON CENTER
O.D. OUTSIDE DIAMETER
OH. OVERHEAD
OPP. OPPOSITE
PL. PLATE
PLY. PLYWOOD
PNL. PANEL
PVC. POLYVINYLCHLORIDE
QTY. QUANTITY
R. RADIUS
REBAR. REINFORCING STEEL
REF. REFERENCE
REQ. REQUIRED
RM. ROOM
R.O. ROUGH OPENING

SCH. SCHEDULE
SHT. SHEET
SIM. SIMILAR
SPI. SPRAY POLYURETHANE INS.
S.S. STAINLESS STEEL
STD. STANDARD
SYM. SYMMETRICAL
T&G. TONGUE AND GROOVE
THRU. THROUGH
T.J.I. TRUSS JOIST INCORPORATED
T.O. TOP OF
T.O.B. TOP OF BEAM
T.O.F. TOP OF FOOTING
T.O.S. TOP OF SLAB
T.O.W. TOP OF WALL
TYP. TYPICAL
U.G. UNDERGROUND
US. UNITED STATES
VCT. VINYL COMPOSITION TILE
VERT. VERTICAL
W/ WITH
WC. WALL COVERING
WP. WATER PROOF
WWF. WELDED WIRE FABRIC
XPS. EXTRUDED POLYSTYRENE

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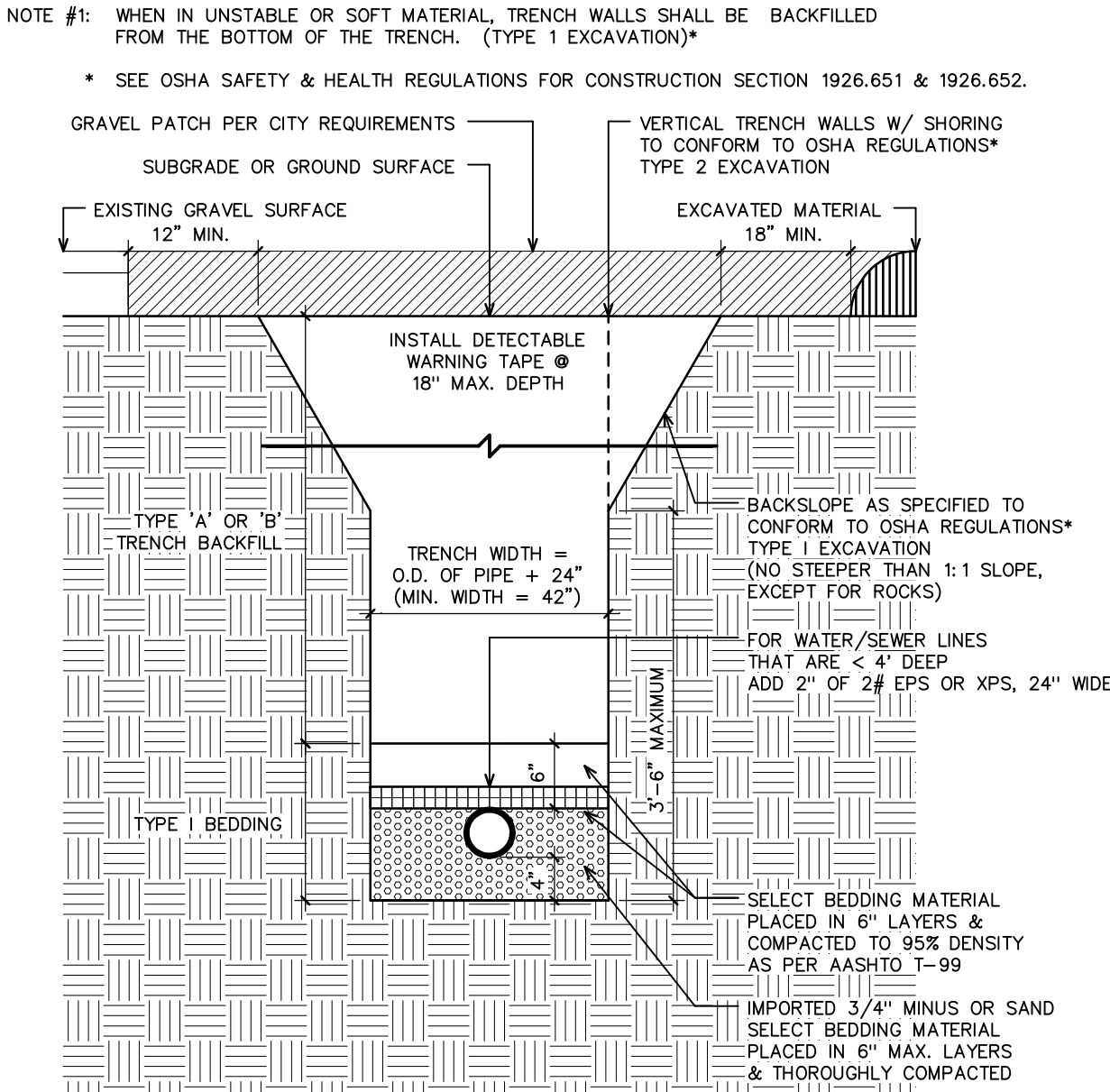
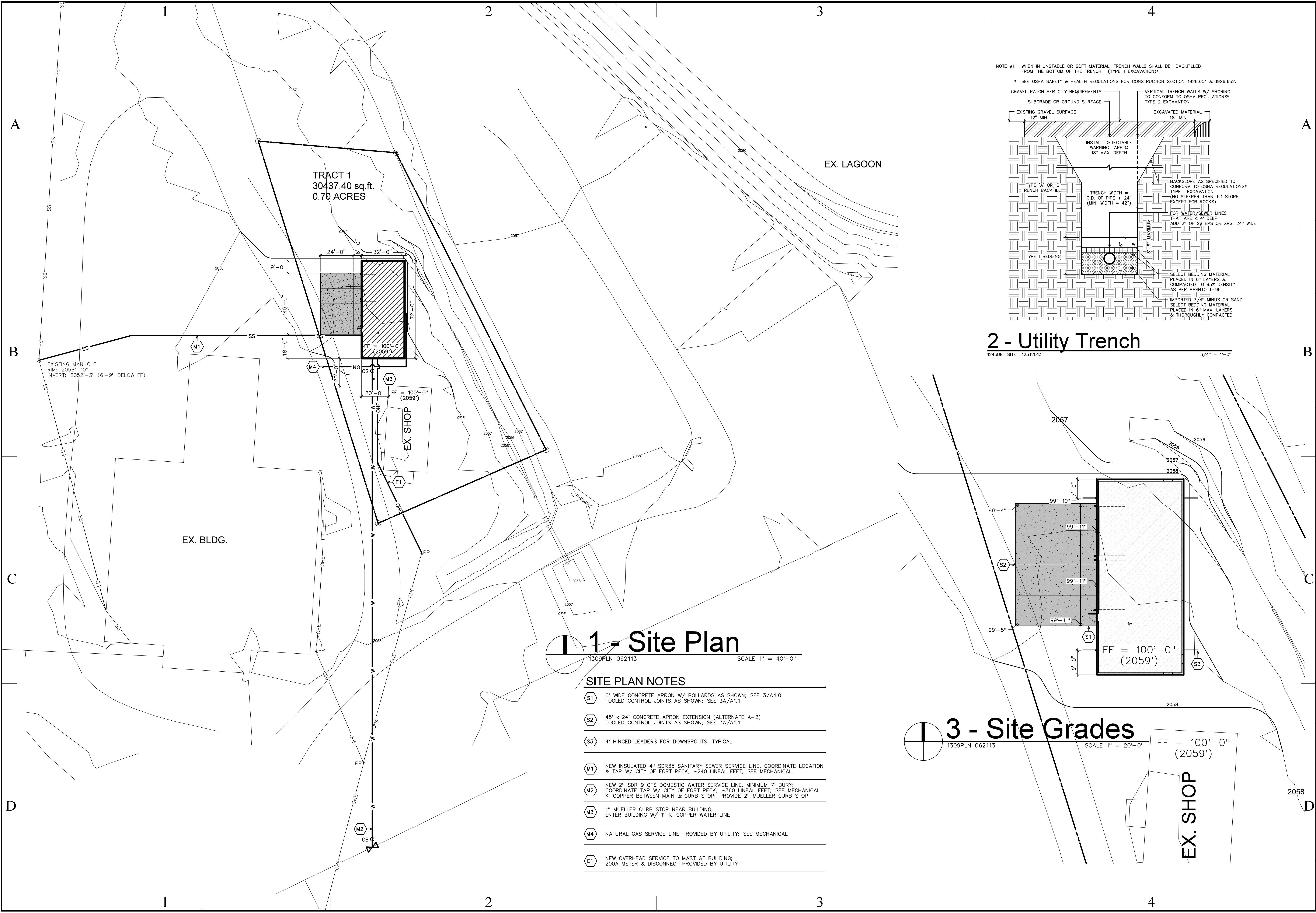
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Fort Peck, Montana

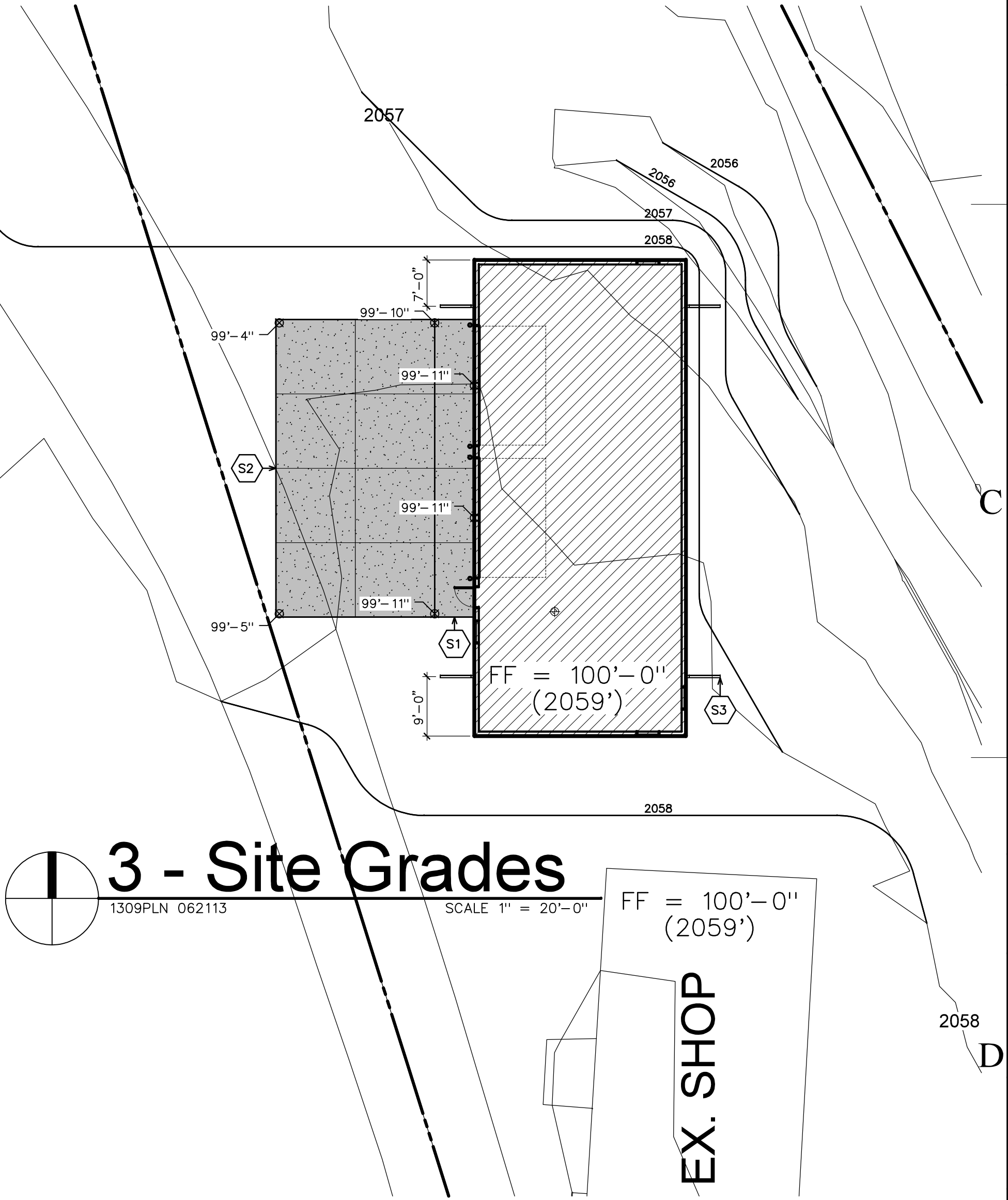
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JOB No. 1309
DRAWN BJ
CHECK MJS
DATE 03/07/2014

Title
Index
& Codes
G1.0



2 - Utility Trench

1245DET_SITE 12312013 3/4" = 1'-0"



3 - Site Grades

1309PLN 062113 SCALE 1" = 20'-0" FF = 100'-0" (2059')

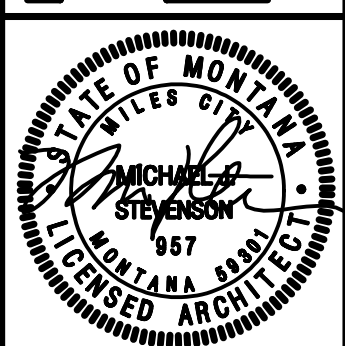
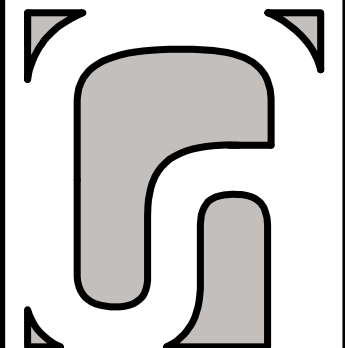
1 - Site Plan

1309PLN 062113 SCALE 1" = 40'-0"

SITE PLAN NOTES

- S1 6" WIDE CONCRETE APRON W/ BOLLARDS AS SHOWN; SEE 3/A4.0
TOOLED CONTROL JOINTS AS SHOWN; SEE 3/A/A1.1
- S2 45' x 24' CONCRETE APRON EXTENSION (ALTERNATE A-2)
TOOLED CONTROL JOINTS AS SHOWN; SEE 3/A/A1.1
- S3 4" HINGED LEADERS FOR DOWNSPOUTS, TYPICAL
- M1 NEW INSULATED 4" SDR35 SANITARY SEWER SERVICE LINE, COORDINATE LOCATION
& TAP W/ CITY OF FORT PECK; ~240 LINEAL FEET; SEE MECHANICAL
- M2 NEW 2" SDR 9 CTS DOMESTIC WATER SERVICE LINE, MINIMUM 7" BURY;
COORDINATE TAP W/ CITY OF FORT PECK; ~360 LINEAL FEET; SEE MECHANICAL
K-COPPER BETWEEN MAIN & CURB STOP; PROVIDE 2" MUELLER CURB STOP
- M3 1" MUELLER CURB STOP NEAR BUILDING;
ENTER BUILDING W/ 1" K-COPPER WATER LINE
- M4 NATURAL GAS SERVICE LINE PROVIDED BY UTILITY; SEE MECHANICAL
- E1 NEW OVERHEAD SERVICE TO MAST AT BUILDING;
200A METER & DISCONNECT PROVIDED BY UTILITY

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**Fort Peck Fisheries
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Fort Peck, Montana**

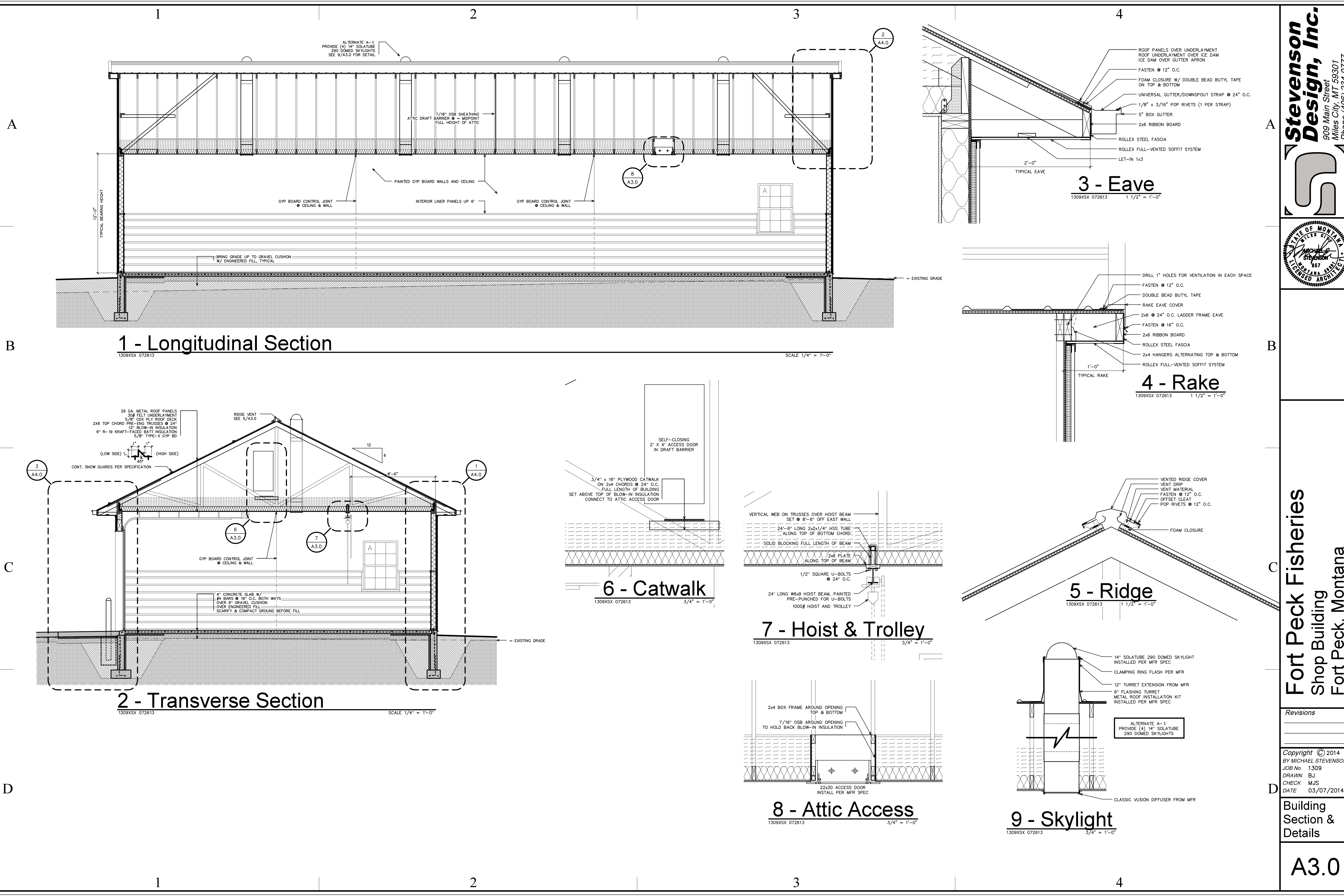
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Site Plan,
Details &
Notes


A0.1



A1.0



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Fort Peck, Montana

Revisions

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Building Section & Details

A3.0

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A

B

C

D

HEATER SCHEDULE														
ITEM	TYPE	AREA SERVED	AFUE	CFM	CSA CFM	ESP IN W.C.	HEATING CAPACITY			ELECTRICAL		MANUFACTURER & MODEL NO.	NOTES	CONTROL
							FUEL TYPE	INPUT MBH ØSL	OUT MBH ØSITE	AMPS	V-ø			
UH-1	HORZ	101 BOAT	92.1	1400	200	0.25	NG	62.4	57.4	10.0	120-1	AMERICAN STD AUC18080A9421A	1	2

1. SEE GAS EQUIPMENT CONNECTION & FURNACE INSTALLATION DETAIL. PROVIDE MERV8 FILTERS FOR CONSTRUCTION, REPLACE AT OWNER OCCUPANCY.
PROVIDE CONDENSATE NEUTRALIZATION KIT DAYLIGHT DRAIN.
2. PROVIDE WIRED 7DAY PROGRAMMABLE THERMOSTAT

SAND & OIL INTERCEPTOR											
ITEM	SERVES	PIPE SLOPE IN/FT	PIPE SIZE IN	# OF VEHICLES	MIN CODE CAPACITY (1)	RATED CAPACITY	TRAFFIC RATED	MANUF & MODEL	NOTES		
					VOLUME GAL	FLOW GPM					
SOI-1	101 BOAT STORAGE	1/8	4	4	52.4	116	75	125	NO	SCHIER PRODUCTS OS-75 C24M	2

1. SIZED PER UPC SECTION 1017 2. PROVIDE HEIGHT EXTENSION SO COVER IS FLUSH WITH FLOOR.

PLUMBING FIXTURE AND EQUIPMENT SCHEDULE												
TAG	FIXTURE	MANUFACTURER	FIXTURE	TRIM	SUPPLIES	TRAP/WASTE	DRAIN	CW	HW/TEPD	WASTE	VENT	NOTES/REMARKS
BP-1	REDUCED PRESS BF PREVENTER	WILKINS	975XLU	STRAINER ON INLET	---	---	---	1	---	---	---	NOTE 1
ES-1	EMERGENCY SHWR/EYEWASH	HAWS	8300-8309	---	BALL VALVES ON CW&HW	---	FD-1	---	1 1/4	---	---	NOTE 3
FD-1	FLOOR DRAIN	SIoux CHIEF	860-4PN	860-U BUCKET	---	DEEP SEAL	---	---	---	4	---	ROUND NICKEL- BRONZE TOP
FD-2	FLOOR DRAIN	SIoux CHIEF	842	---	---	DEEP SEAL	---	---	---	3	2	NOTE 2, ROUND NICKEL-BRONZE TOP
HB-1	HOSE BIB	WOODFORD	26	---	---	---	---	1/2	---	---	---	WM Ø 3/8" AFF
L-1	LAVATORY WM, ADA	PROFLO	PF5514WH	MOEN 8422F05	W/ STOPS	OFFSET P-TRAP	GRID DRAIN	1/2	1/2	1 1/2	1 1/4	NOTE 2, 4 0.5 GPM AERATOR
SS-1	SERVICE SINK	PROFLO	PFLT2024	MOEN 8276, S0011	W/ STOPS	P-TRAP	---	1/2	1/2	2	1 1/2	WRISTBLADES, NOTE 5

LEGEND: FM = FLOOR MOUNTED, WM = WALL MOUNTED, CT = COUNTERTOP, ADA = ADA APPROVED INSULATION ON HW, CW & SAN AS APPROPRIATE, FT = FLUSH TANK
CP = CHROME PLATED, TP = TRAP PRIMER, PA = PRESSURE ASSIST, CM = CEILING MOUNTED, ADA = AMERICANS WITH DISABILITIES ACT

GENERAL NOTES:
1. SEE ARCHITECTURAL DWGS FOR MOUNTING HEIGHTS ON ALL WALL MOUNTED FIXTURES

NOTES:
1. SEE WATER SERVICE ENTRANCE.
2. PAINTED ESCUTCHEONS, ADA INSULATION ON SAN, CW, & HW. COVERPLATE FOR FAUCET HOLES IN LAV INSTALL TRAP PRIMER TAIL PIECE SIoux CHIEF 213-092.
1/2 ROUTE CONTINUOUS SOFT COPPER TUBING OR PEX FROM TAIL PIECE DN IN WALL TO TD-2 PRIMER CONNECTION. TUBING SHALL HAVE NO JOINTS FROM TAIL PIECE TO FD-2.
3. PROVIDE 1" CW & HW INLET CONNECTIONS TO HAWS 9201E MIXING VALVE, 1 1/4 TEPD TO UNIT. MOUNT SIGNAGE ON WALL
4. COMMERCIAL GRADE, ALL METAL CONSTRUCTION FAUCET WITH METAL CARTRIDGES.
5. PROVIDE TRAP PRIMER TAIL PIECE SIoux CHIEF 200-090. ROUTE COPPER OR PEX TUBING TO FD-1 TAPPING.

DOMESTIC WATER HEATER SCHEDULE													
ITEM	HEATER TYPE	TANK CAPACITY GAL	HTG CAP		VENT MATERIAL	SET MAX TANK OP TEMP	RECOVERY GPH	TEMP RISE °F	ELEC DATA			MANUFACTURER & MODEL NO.	NOTES
			FUEL	# OF ELEC ELEMENTS					KW	V/Ø	MOC		
DWH-1	TANK	30	ELEC	1	--	110	5	70	4.5	208/1	--	BRADFORD WHITE M-1-30L6S	1

1. SEE TANK WATER HEATER DETAIL.

FANS											
ITEM	TYPE	ACFM	STATIC PRESSURE INWC	SOUND (DBA) OR SONES	FAN HP (WATTS)	ELECTRICAL V-Ø	FAN RPM	STARTER	MANUFACTURER & MODEL	NOTES	CONTROL
EF-1	CEILING	80	0.10	0.3	(75)	120-1	870	---	PANASONIC FV-Ø8VQL5	1, FAN/LIGHT	2
EF-2	ROOF UPBLAST	440	0.15	2.0	1/2	120-1	665	---	COOK VCRD 120V17DEC	NOTE 4	3
EF-3	NLINE PLASTIC	85	0.10	1.0	(25)	120-1	2430	---	S&P TD-100		WALL SWITCH

1. PROVIDE UNIT W/ BACK DRAFT DAMPER, EXHAUST DUCT TO WALL CAP COLOR BY ARCH. 2. LIGHT CONTROLS. 3. WALL MOUNTED SPEED SWITCH.
4. PROVIDE ROOF CURBS, BACKDRAFT DAMPER, DISCONNECT SWITCH.

GRILLES, REGISTERS, & DIFFUSERS						
ORD TAG	MANUFACTURER & MODEL	SERVICE	MOUNTING	FINISH / COLOR (1)	VOLUME DAMPER	PLAN SIZE REFERS TO
E1	KRUEGER 56490	EXHAUST	GYP CLG	WHITE	OBD	NECK
S1	KRUEGER 880	SUPPLY	WALL	WHITE	NO	NECK
R1	KRUEGER S80	RETURN	WALL	WHITE	NO	NECK

1. VERIFY FINISH, COLOR AND/OR CLG TYPE PRIOR TO ORDERING. 2. DAMPER ADJUSTMENT THRU FACE OF GRILLE. 3. MOUNT 12" AFF UNLESS NOTED OTHERWISE IN PLAN.

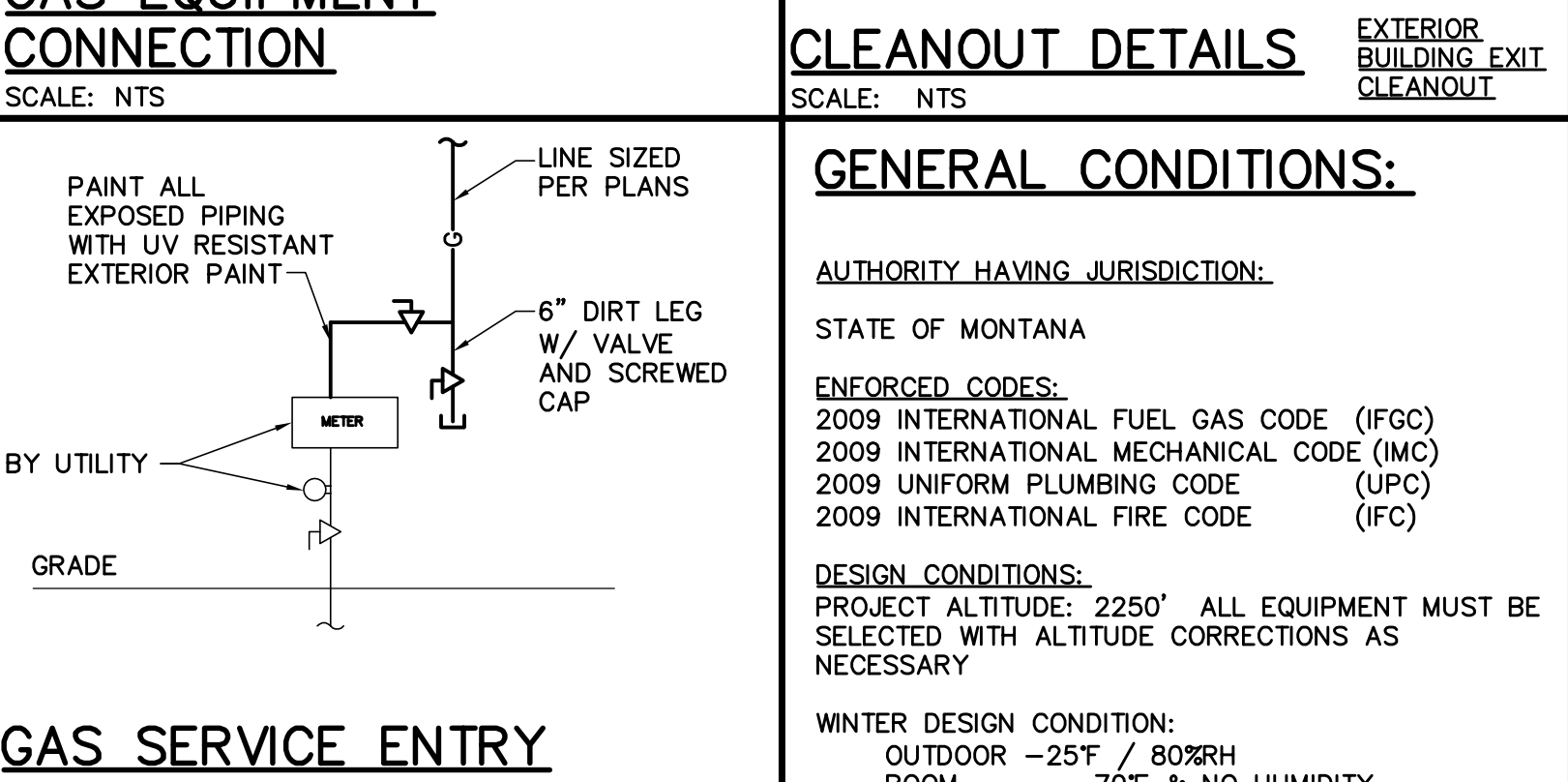
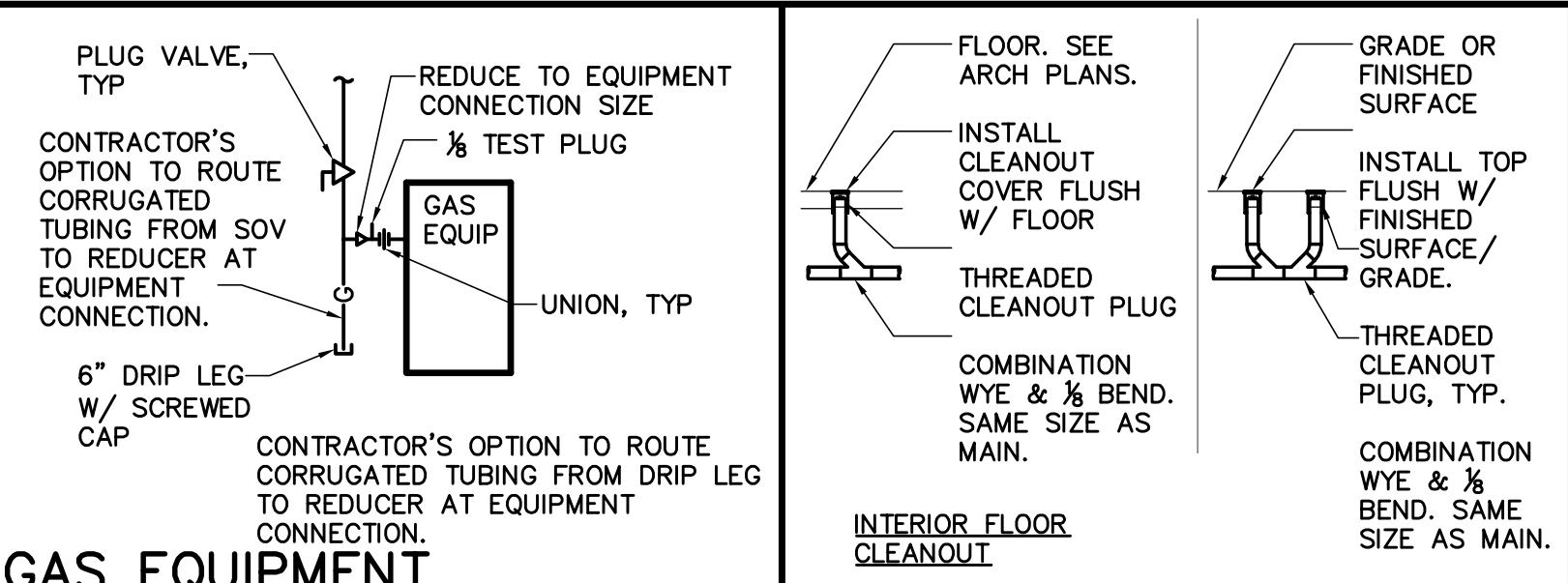
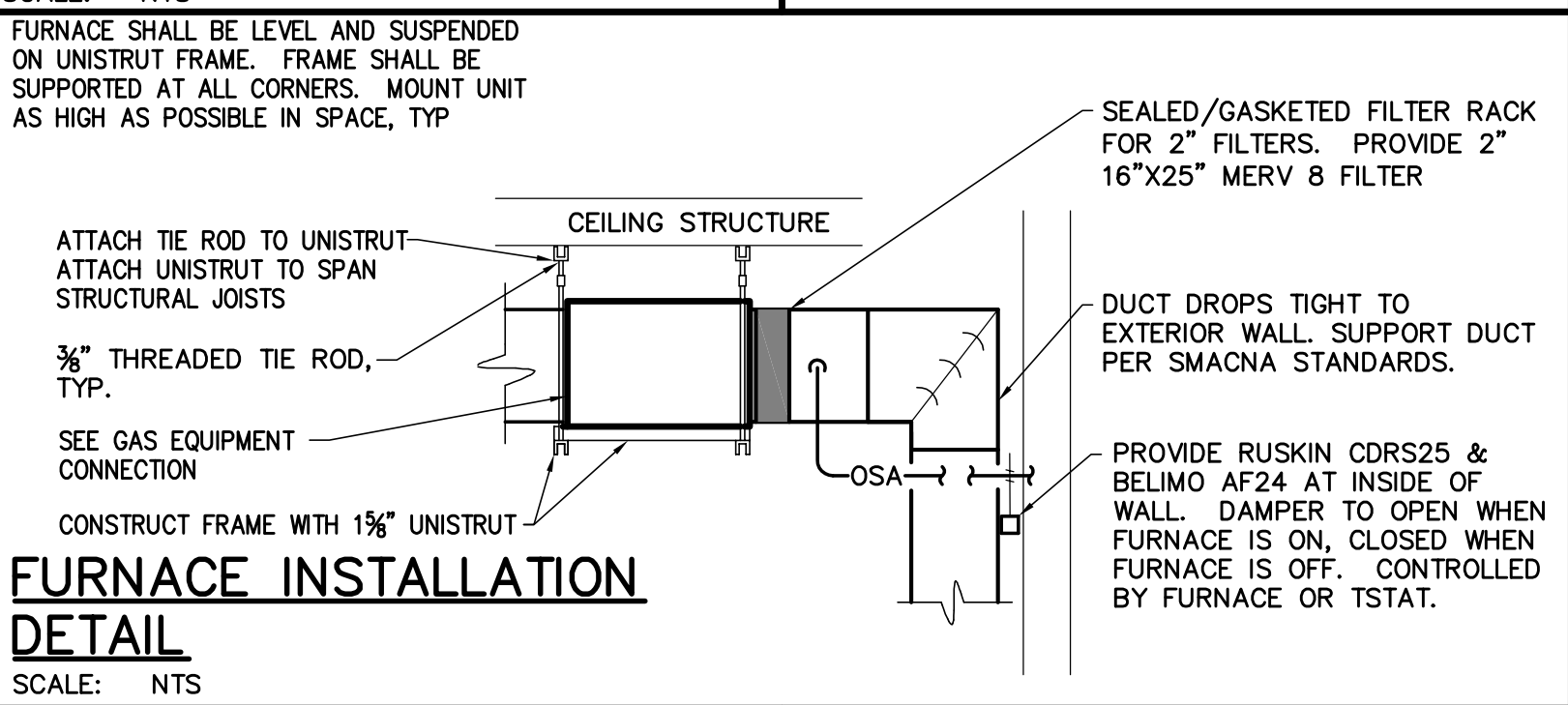
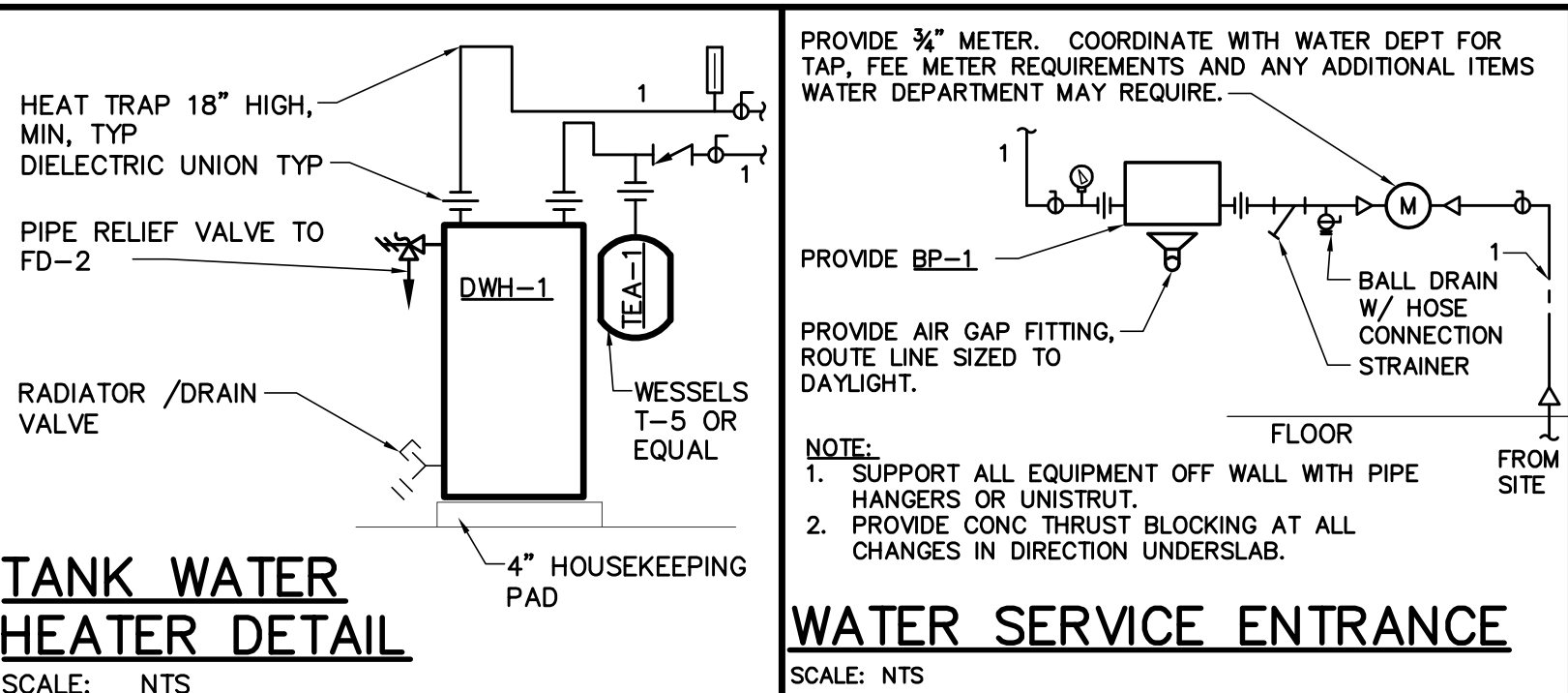
GENERAL MECHANICAL PROJECT REQUIREMENTS:

GENERAL:
1. ALL WORK SHALL BE PERFORMED BY OR DIRECTLY SUPERVISED BY AN EXPERIENCED AND SKILLED CRAFTSMAN IN THE TRADE. ALL WORK SHALL BE NEAT, CLEAN AND PROFESSIONAL LOOKING. UNSATISFACTORY INSTALLATION IDENTIFIED BY OWNER, GC SHALL REPLACE AT THE CONTRACTOR'S EXPENSE WITHOUT IMPACT TO THE CONSTRUCTION SCHEDULE.
2. NEW EQUIPMENT IS DENOTED BY XX-ØØ SEE SCHEDULES & DETAILS. MANUFACTURER & MODEL NUMBERS LISTED IN SCHEDULES & NOTES DEFINE PERFORMANCE, PHYSICAL AND QUALITY REQUIREMENTS. THE CONTRACTOR SHALL VERIFY ANY CHANGES TO EQUIPMENT LISTED MEET OR EXCEED THOSE REQUIREMENTS PRIOR TO SUBMITTING INFORMATION APPROVAL BY GC & OWNER FOR ALTERNATE EQUIPMENT AND DEVICES.
3. SPACE TEMPERATURE SENSORS/STATS SHALL BE MOUNTED TO MEET ADA MOUNTING HEIGHT.
4. WORKMANSHIP SHALL COMPLY WITH THE CURRENT CODES AND ALL OTHER LOCAL CODES AND ORDINANCES.
5. PATCH ALL CUTTING OR DRILLING OF FINISHED WALLS, CEILINGS, OR FLOORS.
6. MECH CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS FOR THIS SCOPE AND COORDINATION W/ UTILITY CONNECTIONS AND SERVICES.
7. WORK SHALL BE PERFORMED BY A LICENSED AND BONDED CONTRACTOR (IN MONTANA) UTILIZING TRADESMEN SKILLED IN THE ART AND IN ACCORDANCE WITH ACCEPTABLE PRACTICES.
8. PROVIDE AND INSTALL ALL INCIDENTAL ITEMS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.
9. FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, CONTRACTOR FURTHER AGREES THAT HE WILL REPLACE OR REPAIR ALL DEFECTIVE EQUIPMENT AND INSTALLATION THAT BECOMES DEFECTIVE DURING THE TERM OF THIS WARRANTY. THIS DOES NOT INCLUDE EXCESSIVE ABUSE OR DAMAGE INFlicted BY THE OWNER AND/OR OTHERS.

10. PERFORM WORK IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE. THE GOOD APPEARANCE OF THE FINISHED WORK SHALL BE OF EQUAL IMPORTANCE WITH ITS MECHANICAL EFFICIENCY. DESIGN TEAM/OWNER MAY REJECT WORK IF WORKMANSHIP AND APPEARANCE ARE NOT SATISFACTORY.
11. BE RESPONSIBLE FOR AND COORDINATE THE WORK OF ALL SUBCONTRACTORS WORKING UNDER MECHANICAL CONTRACTOR.
12. CONFER AND COOPERATE WITH OTHER TRADES AND COORDINATE THE WORK IN PROPER RELATION WITH THEIRS. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH OTHER TRADES.
13. OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION IN PIPES AND DUCTS SHALL BE AS REQUIRED. MAINTAIN PROPER HEAD ROOM AND PITCH OF SLOPING PIPES WHETHER OR NOT INDICATED ON THE DRAWINGS. FURNISH AND INSTALL ALL DUCTWORK FITTINGS, TRAPS, AIR VENTS, SANITARY VENTS, ETC. AS REQUIRED TO AFFECT THESE OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION.
14. STORAGE OF MATERIAL: STORE ALL MATERIALS PROVIDED ON PROJECT PROTECTED FROM THE ENVIRONMENT. STORE MATERIALS OFF OF FINISHED GRADE OR FLOOR. PROVIDE CRIBBING, SHELVING OR STORAGE CONTAINERS AS NECESSARY. PROVIDE PIPE AND DUCT CAPS FOR ALL STORED, STAGED AND HUNG MATERIALS.
15. INSTALL ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
16. INSTALL EQUIPMENT TO ALLOW SERVICE CLEARANCES AS SUGGESTED BY THE MANUFACTURERS.
17. COORDINATE WORK WITH OTHER TRADES. COORDINATE ALL EQUIPMENT WITH CONTROL SYSTEM FOR A COMPLETE OPERABLE SYSTEM.
18. CONTRACTOR SHALL INSTALL ANY BALANCING DEVICE NECESSARY TO ACHIEVE PROPER ADJUSTING AND BALANCING OF MECHANICAL SYSTEMS.
19. SEE STRUCTURAL DRAWINGS FOR HANGING FROM ROOF TRUSSES OR FLOOR JOISTS.

PROPERLY LOCATE ANCHORS, CHASES, RECESSES AND OPENINGS REQUIRED FOR THE PROPER INSTALLATION OF THE WORK. ARRANGE WITH PROPER CONTRACTORS FOR THE BUILDING OF ANCHORS, ETC. AND FOR LEAVING REQUIRED CHASES, RECESSES AND OPENINGS.
20. PROVIDE CUTSHEETS, SUBMITTAL DATA, & IOM DOCUMENTATION IN A BINDER TO OWNER AT SUBSTANTIAL COMPLETION.

PIPING NOTES:
1. SEE PLUMBING FIXTURE SCHEDULE FOR SIZE BRANCH PIPING TO INDIVIDUAL PLUMBING FIXTURES.
2. ALL NATURAL GAS PIPE/FITTINGS SHALL BE SCHEDULE MATERIAL LISTED IN IFGC.
3. SANITARY WASTE (SAN) AND SANITARY VENT (V) PIPE & FITTINGS SHALL BE OF ANY MATERIALS LISTED IN THE UPC W/ APPROVED LISTINGS.
4. DOMESTIC COLD WATER (CW) AND DOMESTIC HOT WATER (HW) SHALL BE COPPER PIPING WITH LISTINGS FOR PIPE AND FITTINGS PER UPC. CONTRACTOR'S OPTION TO PLASTIC AS LISTED IN UPC.
5. PEX PIPE SYSTEMS MAY BE USED FOR CW OR HW WHERE CONCEALED IN WALLS OR FLOORS. PEX TUBING WILL REQUIRE UP SIZING OF TUBING (1) DIAMETER LARGER THAN LISTED IN PLAN FOR PIPE SYSTEMS.
6. ALL VALVES SHALL HAVE WOG LISTING AND CWP OF 125PSIG.
7. ALL PIPING SHALL BE RUN FULL SIZE AS INDICATED ON DRAWINGS. ANY REDUCTIONS IN PIPING REQUIRED BY EQUIPMENT CONNECTIONS SHALL BE MADE AT THESE CONNECTION POINTS.
8. RUN PIPING AS DIRECT AS POSSIBLE TO REQUIRED CONNECTIONS, AND SLOPE TO DRAIN VALVES AT LOW POINTS FOR COMPLETE SYSTEM DRAIN DOWN. LOCATE DRAIN VALVES AT ACCESSIBLE POINTS WITHIN THE SYSTEM.
9. ALL VALVES SHALL BE OF ONE MANUFACTURER AND SHALL BE LISTED WITH THE MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY.



GENERAL CONDITIONS:
AUTHORITY HAVING JURISDICTION:
STATE OF MONTANA
ENFORCED CODES:
2009 INTERNATIONAL FUEL GAS CODE (IFGC)
2009 INTERNATIONAL MECHANICAL CODE (IMC)
2009 UNIFORM PLUMBING CODE (UPC)
2009 INTERNATIONAL FIRE CODE (IFC)
DESIGN CONDITIONS:
PROJECT ALTITUDE: 2250' ALL EQUIPMENT MUST BE SELECTED WITH ALTITUDE CORRECTIONS AS NECESSARY
WINTER DESIGN CONDITION:
OUTDOOR -25F / 80%RH
ROOM 70F & NO HUMIDITY
CONTROL/REQUIREMENT
SUMMER DESIGN CONDITION: NO COOLING REQUIREMENTS
GAS - MDU VICTOR TAYLOR (406) 989-2163
WATER - FORT PECK RURAL WATER DISTRICT (406) 526-3529

VALVE SYMBOLS
GATE VALVE
CHECK VALVE
BALL VALVE
PRESSURE RELIEF VALVE
PLUG VALVE
WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)
HVAC
DUCT MOUNTED DAMPER. CONTROL DAMPER - 2 POSITION
DUCTWORK DIMENSIONAL DATA & TYPE: SHEETMETAL DIMENSIONS WRAP INSULATION AS APPLICABLE
ROUND DUCTWORK
CONTROLS (IN PLAN)
ROOM TEMPERATURE SENSOR W/ USER INTERFACE. UNIT TO HAVE INSULATED BASE.
FAN SPEED CONTROLLER
PIPE SYMBOLS
REDUCER OR INCREASER
TOP CONNECTION, 45° OR 90°
BOTTOM CONNECTION, 45° OR 90°
SIDE CONNECTION
RISE OR DROP IN PIPE
UNION
PIPE UP
PIPE DOWN
THERMOMETER
PRESSURE GAGE
DOMESTIC COLD WATER
DOMESTIC HOT WATER
DOMESTIC HOW WATER RECIRC
SANITARY SEWER
STORM WATER

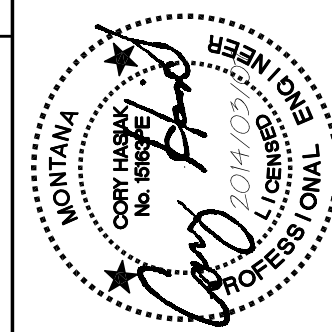
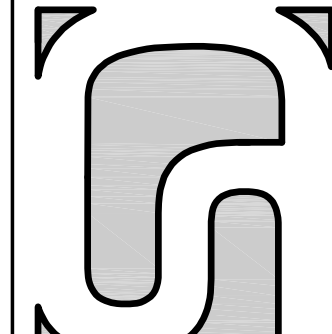
1 - Mechanical Plan

2 - Plumbing Plan

MECHANICAL NOTES:
PLAN 2
1. WATER SERVICE ENTRANCE SEE DETAIL. ROUTE PIPING UP FROM 7'-0" BELOW GRADE INTO BUILDING. CHANGE FROM SITE PIPING MATERIAL TO COPPER AT FLOOR LINE.
2. INSTALL TRAP PRIMER. ROUTE TUBING TO ED-2
3. CHANGE TO 3" PIPING AT UNDERSIDE OF ROOF. VENT UP THRU ROOF (VTR). TERMINATE PIPING 24" ABOVE ROOF. SEE ARCHITECTURAL DETAILS FOR FLASHING REQUIREMENTS.
4. BED PIPING IN 4" OF CLEAN SAND. INSTALL TRACER WIRE FROM BUILDING TO CONNECTION AT MAIN 12" ABOVE PIPING AND UTILITY MARKER TAPE 24" ABOVE PIPING. GRADE PIPING AT 1% TOWARDS UTILITY CONNECTION. COORDINATE WITH SANITATION DEPARTMENT FOR CONNECTION OF SANITARY PIPING TO UTILITY. SEE ARCHITECTURAL SITE PLAN FOR PROPOSED ROUTING.
5. COORDINATE WITH WATER DEPARTMENT FOR NEW DOMESTIC WATER TAP. ROUTE PIPING 7'-0" BELOW GRADE. BED PIPING IN 4" OF CLEAN SAND. PROVIDE PIPING FROM CONNECTION TO MAIN THRU FINISH FLOOR SHALL BE MATERIAL AS PREFERRED BY WATER DEPARTMENT. INSTALL TRACER WIRE FROM BUILDING TO CONNECTION AT MAIN 12" ABOVE PIPING AND UTILITY MARKER TAPE 24" ABOVE PIPING. SEE ARCHITECTURAL SITE PLAN FOR PROPOSED ROUTING.
6. COORDINATE SETTING OF THE GAS METER WITH UTILITY & OWNER. SERVICE REQUIRES PRESSURE LESS THAN 14"WC / 802. SEE PLAN FOR MBH/CFH SIZE. PROVIDE DIRT LEG AND SHUT-OFF VALVE DIRECTLY DOWNSTREAM OF METER/REGULATOR. SEE GAS SERVICE ENTRY DETAIL.
6.1. NATURAL GAS PIPING. SIZING AS SHOWN SCH 40 PIPE IS 1ST NUMBER / CSST SIZE IS SECOND NUMBER.
6.2. EXTERIOR EXPOSED PIPING/TUBING SHALL BE PAINTED TO MATCH EXTERIOR COLOR. CSST SHALL HAVE SERVICE JACKET SUITABLE FOR EXTERIOR INSTALLATION.
PLAN 1
1. PROVIDE WALL CAP ON OSA DUCT AT EXTERIOR WALL. CAP COLOR BY ARCHITECT. PROVIDE 3" DUCT WRAP INSULATION ON OSA DUCTWORK TO UN-1.
2. TERMINATE DUCTWORK WITH WALL CAP. SEAL PENETRATIONS WATERTIGHT. WALL CAP COLOR BY ARCHITECT. INSTALL WALL CAP MIN OF 3" FROM BUILDING OPENINGS AND INTAKES.
3. COORDINATE WITH GC FOR FLASHING OF FACTORY ROOF CURB. ROUTE DUCTWORK CONNECTION SIZE DOWN TO CEILING. INSULATE EXHAUST DUCTWORK IN ATTIC WITH R-8 DUCT WRAP. TERMINATE DUCTWORK IN SHOP WITH WITH E1 CEILING GRILLE. FIELD VERIFY OCCUPANT CONTROL SWITCH WITH OWNER & ELECTRICIAN PRIOR TO INSTALLATION OF CYP BOARD.
4. UNIT HEATER REQUIREMENTS:
4.1. SET PROGRAMMABLE TSTAT TO 70F HEATING.
4.2. UNIT TO CYCLE TO SATISFY HEATING REQUIREMENT.
4.3. ROUTE PVC FLUE & COMBUSTION AIR PIPING FROM EQUIPMENT OUT ROOF. CEMENT ALL JOINTS IN FLUE & CA PIPING. SLOPE PIPE ON TOWARDS EQUIPMENT. TERMINATE WITH CONCENTRIC WALL KIT.
4.4. OSA AIR DAMPER TO OPEN WHEN FURNACE IS ON AND OSA DAMPER TO CLOSE WHEN FURNACE IS OFF. OSA DAMPER TO FAIL IN CLOSED POSITION.
4.5. SEE FURNACE INSTALLATION DETAIL.
5. COORDINATE 1" UNDERCUT ON DOOR WITH GC.
6. INSTALL 3" PVC PIPE FROM BATTERY CHARGING CABINET UP AND OUT WALL. DISCHARGE 3" PVC PIPE TO 4 LOUVER PLASTIC WALL CAP. PROVIDE RUBBER GASKET CONNECTION AT CABINET. COORDINATE WITH OWNER FOR FINAL LOCATION OF BATTERY CABINET. DRILL CABINET IF NOT OUTLET IS PRESENT ON CABINET.

GENERAL NOTES:
1. PROVIDE AIR GAP FOR ALL INDIRECT DRAINS TO MEET UPC REQUIREMENTS.
2. SEE CLEANOUT DETAILS, TYPICAL.
3. SLOPE ALL SANITARY WASTE PIPING 1/8" PER LINEAR FOOT.
4. SHEETMETAL DUCTWORK DENOTED XX/XX.
5. ROUTE ALL CONTROL WIRING IN EMT CONDUIT WHEN EXPOSED IN OCCUPIED SPACES.

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Revisions

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MECHANICAL PLANS & DETAILS

M1.1

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A

B

C

D

BASIC ELECTRICAL REQUIREMENTS

SUMMARY OF WORK:
FURNISH ALL LABOR AND MATERIALS AND PERFORM ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF COMPLETE AND OPERATING ELECTRICAL SYSTEMS SUBJECT TO THE CONDITIONS OF THE CONTRACT. PROVIDE SATISFACTORY OPERATION OF ALL EQUIPMENT AND CONTROLS TO THE ARCHITECT/ENGINEER UPON REQUEST.

EXAMINATION OF SITE:
VISIT THE SITE BEFORE SUBMITTING BID AS NO EXTRAS WILL BE ALLOWED FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

COORDINATION:
COORDINATE AND ORDER THE PROGRESS OF WORK TO CONFORM TO THE OWNER'S SCHEDULE AND THE PROGRESS OF THE WORK OF THE OTHER TRADES. SCHEDULE PLAN WORK SO THAT THE DURATION OF THE INTERRUPTIONS ARE KEPT TO A MINIMUM. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND BECAUSE OF THE SMALL SCALE, IT IS NOT POSSIBLE TO INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. VERIFY ALL SPACE REQUIREMENTS, COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.

VERIFY ALL EQUIPMENT IS READY FOR ELECTRICAL CONNECTIONS. COORDINATE ALL ELECTRICAL CONNECTIONS WITH THE START-UP OF THE EQUIPMENT.

THE CONTRACTOR SHALL PLAN HIS WORK TO PROCEED WITH MINIMUM INTERFERENCE WITH OTHER TRADES AND IT SHALL BE HIS RESPONSIBILITY TO INFORM THE GENERAL CONTRACTOR OF ALL OPENINGS REQUIRED IN THE BUILDING STRUCTURE FOR INSTALLATION OF WORK, AND TO PROVIDE SLEEVES, AS REQUIRED.

QUALITY ASSURANCE:
PERFORM WORK IN ACCORDANCE WITH GOOD COMMERCIAL PRACTICE. PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL STANDARDS. THE QUALITY APPEARANCE OF THE FINISHED WORK SHALL BE OF EQUAL IMPORTANCE WITH ITS ELECTRICAL EFFICIENCY. THE ARCHITECT/ENGINEER MAY REJECT WORK IF WORKMANSHIP AND APPEARANCE ARE NOT SATISFACTORY. INSTALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS, UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

REGULATORY AND CODE REQUIREMENTS:
APPLY FOR AND PAY FOR ALL PERMITS, FEES, LICENSES AND INSPECTIONS FOR THE DIVISION OF WORK. COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AND ORDINANCES. COMPLY WITH REQUIREMENTS OF THE UTILITY COMPANIES. IN THE CASE OF DIFFERENCES BETWEEN THESE REQUIREMENTS AND ORDINANCES, THE MOST STRINGENT SHALL GOVERN. CALL FOR INSPECTIONS REQUIRED BY LOCAL BUILDING INSPECTION AUTHORITY.

WORK SHALL MEET THE REQUIREMENTS OF THE PLANS AND SHALL MEET NO LESS THAN THE MINIMUM REQUIREMENTS AND LATEST CODES AND STANDARDS OF THE FOLLOWING: ANSI, NEC, NEMA, NFPA, OSHA, UL, UBC, LOCAL FIRE MARSHAL, AND SERVING UTILITIES.

PLANS AND SPECIFICATIONS GO HAND IN HAND. WHAT IS REQUIRED IN ONE IS REQUIRED IN BOTH. WHERE CONFLICTS BETWEEN THESE SPECIFICATIONS AND PLANS EXIST, THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

RESPONSIBILITY:
BE RESPONSIBLE FOR THE INSTALLATION OF A SATISFACTORY AND COMPLETE SYSTEM IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS. PROVIDE, AT NO EXTRA COST, ALL INCIDENTAL ITEMS REQUIRED FOR COMPLETION OF THE WORK, EVEN THOUGH THEY ARE NOT SPECIFICALLY MENTIONED OR INDICATED ON THE DRAWINGS.

AT ALL TIMES DURING THE PERFORMANCE OF THE CONTRACTOR, PROPERLY PROTECT WORK FROM DAMAGE AND PROTECT THE OWNER'S PROPERTY FROM INJURY OR LOSS. MAKE GOOD ANY DAMAGE, INJURY, OR LOSS, EXCEPT SUCH AS MAY BE DIRECTLY DUE TO THE ERRORS IN THE PROPOSAL DOCUMENTS OR CAUSED BY REPRESENTATIVES OF THE OWNER. ADEQUATELY PROTECT ADJACENT PROPERTY AS PROVIDED BY LAW AND THE DOCUMENTS. PROVIDE AND MAINTAIN PASSAGEWAYS, GUARD FENCES, LIGHTS, AND OTHER FACILITIES AS REQUIRED FOR PROTECTION.

WORKMANSHIP:
WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY WORKMEN SKILLED IN THE PARTICULAR TRADE, INCLUDING WORK NECESSARY TO PROPERLY COMPLETE THE INSTALLATION IN A WORKMANLIKE MANNER TO PRESENT A NEAT AND FINISHED APPEARANCE.

SHOP DRAWINGS:
SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT SHOWING ANY CHANGES REQUIRED IN DISTRIBUTION BOARDS, PANELBOARDS, LIGHT FIXTURES, ELECTRICAL WIRING, SPACE ALLOCATION, ETC.

PROVIDE PRODUCT DATA WITH MANUFACTURER'S CATALOG INFORMATION SHOWING RATINGS, DIMENSIONS, CONFIGURATIONS AND CONSTRUCTION. ALSO PROVIDE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PROJECT RECORD DRAWINGS:
AT COMPLETION OF WORK, DELIVER COMPLETED PROJECT RECORD DOCUMENTS MARKED WITH FIELD CHANGES TO ARCHITECT/ENGINEER.

OPERATION AND MAINTENANCE DATA:
AT THE COMPLETION OF WORK, SUBMIT (3) TYPED AND HARD-BOUND COPIES OF AN OPERATING AND MAINTENANCE MANUAL TO THE ARCHITECT/ENGINEER FOR APPROVAL BEFORE SCHEDULING ANY SYSTEM DEMONSTRATION FOR THE OWNER.

WARRANTIES:
PROVIDE A WRITTEN WARRANTY TO THE OWNER COVERING THE ENTIRE ELECTRICAL WORK TO BE FREE FROM DEFECTIVE MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE.

CLEAN-UP AND CLOSE-OUT:
KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH CAUSED BY THIS CONTRACTOR'S WORK OR HIS EMPLOYEES.

UPON COMPLETION OF WORK, REMOVE MATERIALS, SCRAPS AND DEBRIS RELATIVE TO THIS CONTRACTOR'S WORK AND LEAVE THE PREMISES, INCLUDING CRAWL SPACES AND CHASES, IN CLEAN AND ORDERLY CONDITION.

CLEAN EXPOSED SURFACES OF LIGHT FIXTURES, DISTRIBUTION BOARDS, PANELS AND OTHER EXPOSED ITEMS OF GREASE, DIRT OR OTHER FOREIGN MATERIAL. REMOVE RUBBISH AND DEBRIS RESULTING FROM THE OPERATIONS OF THIS CONTRACTOR AND LEAVE SPACES CLEAN AND READY FOR USE.

BASIC MATERIALS AND METHODS

MOTORS AND STARTERS:
ALL MOTORS, STARTERS AND OTHER ELECTRICAL CONTROL EQUIPMENT SHALL BE LISTED PER THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC).

COREDILLING AND SAWCUTTING:
PROVIDE ALL COREDRILLING AND SAWCUTTING REQUIRED BY THE WORK IN THIS DIVISION. FIRE AND SMOKE SEAL ALL PENETRATIONS TO MAINTAIN RATINGS OF ALL AREA SEPARATIONS. PATCH AND PREPARE SURFACE TO RECEIVE NEW FINISH WHERE SPECIFIED BY THE ARCHITECT. FINISH SURFACE TO MATCH SURROUNDING SURFACE FINISHES, AS SPECIFIED.

SEALING:
MAINTAIN ALL CEILING, FLOOR AND WALL PROTECTION RATINGS FOR FIRE AND SMOKE. SEAL ALL CONDUIT AND ENCLOSURE PENETRATIONS TO COMPLY WITH UL ASSEMBLY AND BUILDING CODE REQUIREMENTS. ALL SEALANTS AND CONSTRUCTIONS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO APPLICATION. ALL OPENINGS SHALL BE SEALED DAILY.

RACEWAYS:
RACEWAYS SHALL BE CONCEALED AND APPROVED FOR USE AND LOCATION. DRY LOCATIONS – GRC, IMC, EMT. FLEXIBLE CONDUIT – GALVANIZED STEEL, LIQUIDTIGHT.

JUNCTION AND PULL BOXES: SIZE PER THE NEC. DRY LOCATIONS – STEEL WITH COVERS. WET LOCATIONS – CAST ALUMINUM.

COUPLINGS AND CONNECTORS:
GRC – THREADED
IMC – THREADED
EMT – COMPRESSION
PVC – CEMENT
JOINT TYPE. INDENTER TYPE CONNECTORS PROHIBITED.

WIRING DEVICES AND PLATES:
DUPLEX OUTLETS – HUBBELL – HBL5362X SERIES, 120VAC, 20 AMP (OR SERIES IS NOT ACCEPTABLE)
GFCI OUTLETS – HUBBELL – GF20X SERIES, 120VAC, 20 AMP
AC SWITCHES – HUBBELL – HBL1221X SERIES, 120VAC, 20 AMP (OR SERIES IS NOT ACCEPTABLE)
DEVICE COLOR – BLACK (VERIFY WITH ARCHITECT)
PLATES – STAINLESS STEEL (VERIFY WITH ARCHITECT)

ALL RATINGS SHALL MATCH BRANCH CIRCUIT AND LOAD CHARACTERISTICS.

WIRE:
COPPER ONLY WITH THHN/THWN TYPE INSULATION IN RACEWAY. NO ALUMINUM CONDUCTORS ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER. UL LISTED LUGS AND CONNECTORS, NEC APPROVED COLOR CODING. ALL WIRE SHALL HAVE AN INSULATION VOLTAGE RATING OF 600 VOLTS, AND AN INSULATION TEMPERATURE RATING OF 75 DEGREES C.

ALL 120V CIRCUIT CONDUCTORS MAY BE WIRED IN MC CABLE.

ALL 240V CIRCUIT CONDUCTORS SHALL BE RUN IN CONDUIT.

WIRE COLORS: BLACK, RED, AND BLUE FOR CIRCUITS AT 120/208V, SINGLE OR THREE PHASE.

SUPPORTS AND HANGERS:
SUPPORTS AND HANGERS MUST BE UL LISTED AND APPROVED BY LOCAL INSPECTORS.

ANCHORS:
HOLLOW MASONRY – TOGGLE BOLT.
SOLID MASONRY – EXPANSION BOLT.
METAL – MACHINE SCREWS, BOLTS, WELDING.
WOOD – WOOD SCREWS.

GROUNDING:
IN STRICT ACCORDANCE WITH THE NEC AND UTILITY COMPANY REGULATIONS. PROVIDE COPPER EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAYS.

PERMANENTLY ATTACH EQUIPMENT AND GROUNDING CONDUCTORS PRIOR TO ENERGIZING EQUIPMENT.

NAMEPLATES:
PROVIDE ON ALL PANELS, DISCONNECTS AND EQUIPMENT. NAMEPLATES SHALL HAVE 3/16" HIGH LETTERS ENGRAVED WITH CONTRASTING COLOR FILL. DEVICE PLATE ENGRAVING SHALL BE 1/8" HIGH LETTERS WITH CONTRASTING COLOR FILL.

PANELBOARDS:
MANUFACTURER, STYLE, ETC. COMPLETE WITH TYPEWRITTEN DIRECTORY, CIRCUIT BREAKERS (MULTIPLE-POLE INTERNAL TRIP), DEAD FRONT, LOCKING DOORS, UL LISTING, ETC. PROVIDE NEW TYPEWRITTEN PANEL DIRECTORIES IN ALL PANELS AFFECTED BY THE RENOVATION SCOPE OF WORK.

LIGHT FIXTURES:
PROVIDE NEW LIGHT FIXTURES AS SCHEDULED COMPLETE WITH TRIMS, LAMPS, FUSES, GASKETS, BALLASTS, OPTIONS, ACCESSORIES, ETC. AS SCHEDULED.

SUPPORT LIGHT FIXTURES INDEPENDENT OF CEILING FRAMING. CONNECT LIGHT FIXTURES TO BRANCH CIRCUITS, AS INDICATED. INSTALL SPECIFIED LAMPS IN EACH FIXTURE.

MECHANICAL EQUIPMENT:
SEE PLANS FOR CONNECTION OF MECHANICAL EQUIPMENT. PROVIDE FLEXIBLE CONDUIT (WITH EQUIPMENT GROUND CONDUCTOR) CONNECTION AT ALL MOTORS.

ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTION WITH MECHANICAL CONTRACTOR. ALSO, ELECTRICAL CONTRACTOR SHALL OBTAIN MECHANICAL SUBMITTALS TO COORDINATE DISCONNECT MEANS, SPECIFICATIONS, AND VOLTAGE REQUIREMENTS PRIOR TO ROUGH-IN. VERIFY REQUIREMENTS FOR EACH UNIT WHEN DELIVERED TO SITE. IF DISCREPANCIES OCCUR, NOTIFY THE ELECTRICAL ENGINEER AND ARCHITECT IMMEDIATELY.

ELECTRICAL CONTRACTOR IS TO REVIEW AND COORDINATE WITH MECHANICAL AND PLUMBING DRAWINGS, INCLUDING ALL EQUIPMENT SCHEDULES TO ENSURE THAT ALL CONNECTIONS FOR THEIR EQUIPMENT ARE PROVIDED. DEVICE LOCATIONS ARE TO BE COORDINATED WITH THE APPROPRIATE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK OR ELECTRICAL ROUGH-INS.

ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH MECHANICAL CONTRACTOR TO PROVIDE 120V POWER, IF NEEDED, TO ACCOMMODATE ANY LOW VOLTAGE REQUIREMENTS THAT MECHANICAL EQUIPMENT MAY HAVE.

INSTALL DISCONNECT SWITCHES, CONTROLLERS, ETC, TO COMPLETE ALL EQUIPMENT WIRING REQUIREMENTS.

DRAWINGS AND MEASUREMENTS:
CONTRACT DRAWINGS FOR ELECTRICAL WORK ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, CONDUITS AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND OUTLETS. ELECTRICAL TRADES SHALL FOLLOW THESE DRAWINGS IN LAYING OUT THEIR WORK, CONSULT GENERAL CONSTRUCTION DRAWINGS TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THEIR WORK, AND SHALL VERIFY SPACES IN WHICH THEIR WORK WILL BE INSTALLED. COORDINATE WORK WITH OTHER TRADES AS JOB CONDITIONS REASONABLY REQUIRE.

WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN INDICATED LOCATIONS AND ARRANGEMENT, MAKE SUCH CHANGES WITHOUT EXTRA COST TO OWNER.

THE DRAWINGS ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENTS AND ARE NOT TO SERVE AS SHOP DRAWINGS.

ALL RACEWAYS SHALL BE CONCEALED IN FINISHED SPACES UNLESS NOTED OTHERWISE. SURFACE-MOUNTED RACEWAYS SHALL BE PERMITTED WHERE PRIOR APPROVAL IS OBTAINED FROM THE ARCHITECT. RACEWAYS IN NON-FINISHED SPACES, SUCH AS MECHANICAL ROOMS AND CRAWL SPACES, SHALL BE PERMITTED TO BE EXPOSED. ALL EXPOSED RACEWAYS SHALL BE ROUTED PLUMB AND SQUARE TO BUILDING SURFACES. RACEWAYS IN NON-FINISHED SPACES SHALL BE INSTALLED SUCH THAT MAJOR RELOCATION IS NOT REQUIRED WHEN CEILINGS AND WALLS ARE INSTALLED IN THE FUTURE.

OWNER SUPPLIED EQUIPMENT:
COORDINATE ELECTRICAL CONNECTIONS FOR OWNER-SUPPLIED EQUIPMENT (WELDER) WITH OWNER, MANUFACTURER DATA, AND EQUIPMENT NAMEPLATE INFORMATION.

SUBSTITUTIONS:
ALL SUBSTITUTIONS TO BE APPROVED BY OWNER, ARCHITECT AND ENGINEER.

INSTALLATION:
INSTALL WORK IN ACCORDANCE WITH STATE AND LOCAL STANDARDS.

RACEWAY ROUTING, WHEN SHOWN, IS IN APPROXIMATE LOCATIONS. FIELD COORDINATE ROUTING.

CUT CONDUIT SQUARE USING SAW OR PIPE CUTTER; DEBURR CUT ENDS.

INSTALL SUITABLE PULLSTRING OR CORD IN EACH EMPTY RACEWAY. INSTALL SUITABLE CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.

INSTALL FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE RACEWAY CROSSES CONTROL AND EXPANSION JOINTS.

MOUNTING HEIGHTS

DESCRIPTION	HEIGHT
THERMOSTAT	48"
WALL SWITCH	48" TO CENTER
CONVENIENCE OUTLET	48" TO CENTER
MANUAL MOTOR STARTER SWITCH	48"
PANELBOARDS, CABINETS (TO TOP)	72"

MOUNTING HEIGHTS TO BOTTOM OF BOX AND ABOVE FINISHED FLOOR GRADE UNLESS NOTED OTHERWISE.

ELECTRICAL LEGEND

- PANEL
- BRANCH CIRCUIT CONCEALED IN WALL OR CEILING
- BRANCH CIRCUIT CONCEALED IN OR UNDER FLOOR
- HOME RUN TO PANEL. NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS
- NUMBER OF HASHMARKS INDICATES NUMBER OF CONDUCTORS. NO HASHMARKS INDICATES TWO CONDUCTORS.
- INCANDESCENT/LED LIGHT FIXTURE (WALL OR CEILING MOUNT)
- LIGHT FIXTURE (SURFACE)
- DUPLEX CONVENIENCE RECEPTACLE – GROUNDED TYPE
- DUPLEX RECEPTACLE MOUNTED HORIZONTALLY – GROUNDED TYPE
- WEATHERPROOF OUTLET
- WELDER OUTLET (WITH CORD CAP)
- MOTOR
- SPECIAL EQUIPMENT OUTLET AS NOTED
- JUNCTION BOX OR J-BOX
- SWITCH
- SWITCH-FUSE STAT
- NOTE DESIGNATION
- MECHANICAL EQUIPMENT UNIT IDENTIFICATION

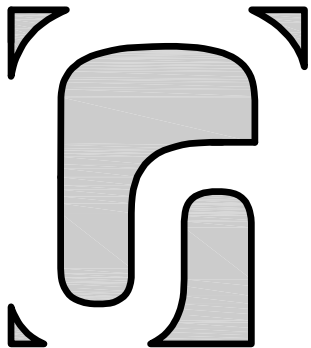
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Revisions

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ELECTRICAL
SPECS.

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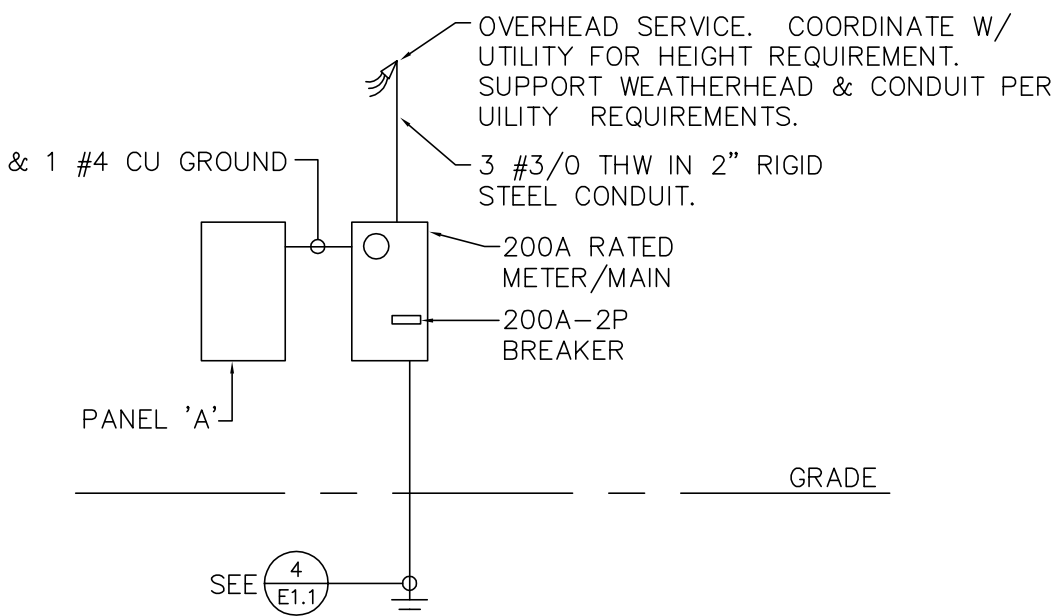
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PANEL SCHEDULE															
PANEL <u>A</u>		MAIN		<u>LUGS ONLY</u>		LOCATION		<u>SOUTH END SHOP</u>							
AMPS <u>225</u>		FEED		<u>TOP</u>		DIMENSION		<u>-</u>							
VOLTAGE <u>120/240</u>		ISC		<u>10,000</u>		MOUNTING		<u>SURFACE</u>							
WIRES <u>3</u> PHASE <u>1</u>						TYPE		<u>SQUARE-D NQ</u>							
CIRCUIT	PH	LOAD WATT	AMP TRIP	CKT NO.	LOAD		CKT NO.	AMP TRIP	LOAD WATT	PH	CIRCUIT				
					A	B						A	B		
LIGHTS	A	928	20	1	2008		2	20	1080	A	OUTLETS-N & W WALLS				
SPARE	B	0	20	3		540	4	20	540	B	OUTLETS-E WALLS, N END				
SPARE	A	0	20	5	540		6	20	540	A	OUTLETS-E WALL, CENTER				
SPARE	B	0	20	7		540	8	20	540	B	OUTLETS-E WALL, S END				
SPARE	A	0	20	9	540		10	20	540	A	OUTLETS-S WALL				
SPARE	B	0	20	11		0	12	20	0	B	SPACE				
SPARE	A	0	20	13	0		14	20	0	A					
SPARE	B	0	20	15		0	16	20	0	B					
SPARE	A	0	20	17	0		18	20	0	A					
	B	0	20	19		0	20	20	0	B					
	A	0	20	21	0		22	20	0	A					
	B	0	20	23		0	24	20	0	B					
	A	0	20	25	0		26	20	0	A					
	B	0	20	27		0	28	20	0	B					
SPACE	A	1150	20	29	1150		30	20	0	A					
OVERHEAD DOOR (NORTH)	B	1150	20	31		1150	32	20	0	B					
OVERHEAD DOOR (SOUTH)	A	1150	20	33	1400		34	20	250	A	SPACE				
EF #2	B	1200	20	35		1450	36	20	250	B	ELEC. HEATER-BATH				
UNIT HEATER	A	3800	50	37	6050		38	30	2250	A	WATER HEATER				
WELDER	B	3800		39		6050	40		2250	B					
CONNECTED LOAD PER PHASE-WATTS					A	<u>11688</u>	B	<u>10930</u>	NOTES:						
DEMAND FACTOR					<u>100% ALL</u>										
DEMAND LOAD PER PHASE-WATTS					A	<u>11688</u>	B	<u>10930</u>							
DEMAND LOAD PER PHASE-AMPS					A	<u>97</u>	B	<u>91</u>							
WIRE SIZE <u>3 #3/0 THW</u>					CONDUIT SIZE		<u>2" PVC</u>	FEED FROM		<u>METER/MAIN</u>					

ELECTRIC HEATER SCHEDULE						
UNIT	TYPE	MANUFACTURER	CATALOG NO.	WATTS	VOLTS	NOTES
EH-1	BASEBOARD	BERKO	BKO-2543	500	240	①
① PROVIDE AN INTEGRAL MOUNT THERMOSTAT.						

LIGHT FIXTURE SCHEDULE						
LETTER DESIG.	FIXTURE			LAMP		NOTES
	MANUFACTURER	CATALOG NO.	LOCATION	TYPE	NO.	
F1	DAY BRITE	T232-120-1/2-EB101-CG-4	CEILING	SURFACE	F032/35	2
F2	HUBBEL	LNC-5LU-5K-PC	WALL	SURFACE	12.6W LED	1
F3	DAY BRITE	CB 217W120 EB 101	WALL	SURFACE	F017/35	2

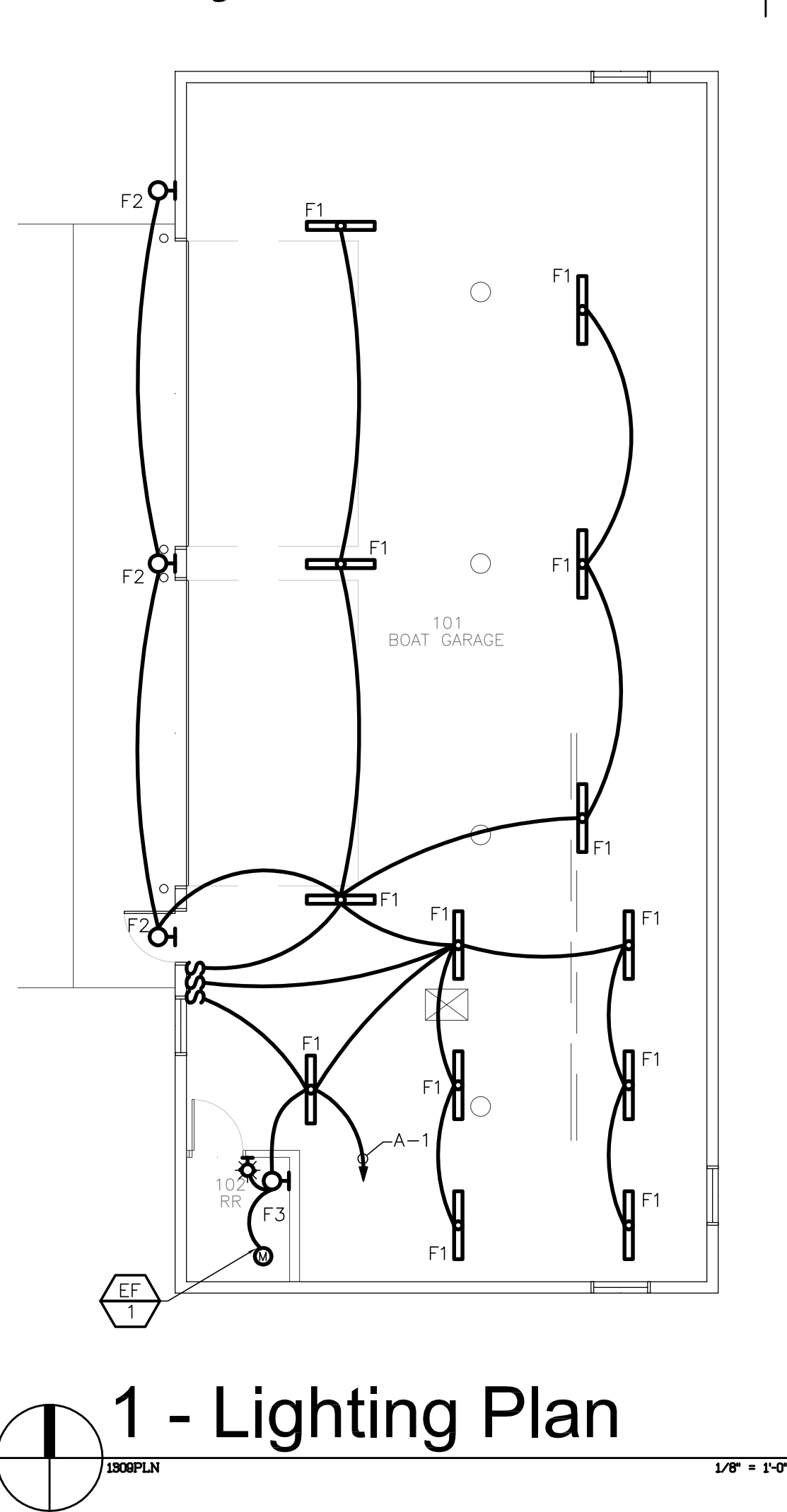
SCHEDULE OF MOTOR STARTERS AND CONTROL EQUIPMENT										
UNIT	MOTOR			STARTER			O.L. HTRS	DEVICES		NOTES
	LOAD	PH	VOLTS	MFR.	CATALOG NO.	SIZE POLES		SWT	PILOT	
UH-1	10 A	1	120	-	-	-	-	-	-	① ③
DWH-1	4500 W	1	208	-	-	-	-	-	-	⑤
EXHAUST FAN #1	100W	1	120	-	-	-	-	-	-	②
EXHAUST FAN #2	1/2 HP	1	120	-	-	-	-	-	-	
OVERHEAD DOOR-1	1/2 HP	1	120	-	-	-	-	-	-	① ④
OVERHEAD DOOR-2	1/2 HP	1	120	-	-	-	-	-	-	① ④
① PROVIDE SWITCH WITH FUSE STAT @ UNIT.										
② CONTROL WITH VANITY LIGHT.										
③ PROVIDE 100VA 24V STEPDOWN TRANSFORMER. DERIVE POWER FROM UNIT. INSTALL TRANSFORMER, JBOX AND WIRING TO CONTROL DAMPER.										
④ PROVIDE CONDUIT BOXES FOR MOUNTING DOOR SAFETY SENSORS. COORDINATE WITH GARAGE DOOR VENDOR FOR WIRING REQUIREMENTS.										
⑤ PROVIDE A 30A-2P FUSED GENERAL DUTY SERVICE DISCONNECT @ UNIT. PROVIDE 30 AMP FUSES.										



3 - Panel Riser Diagram

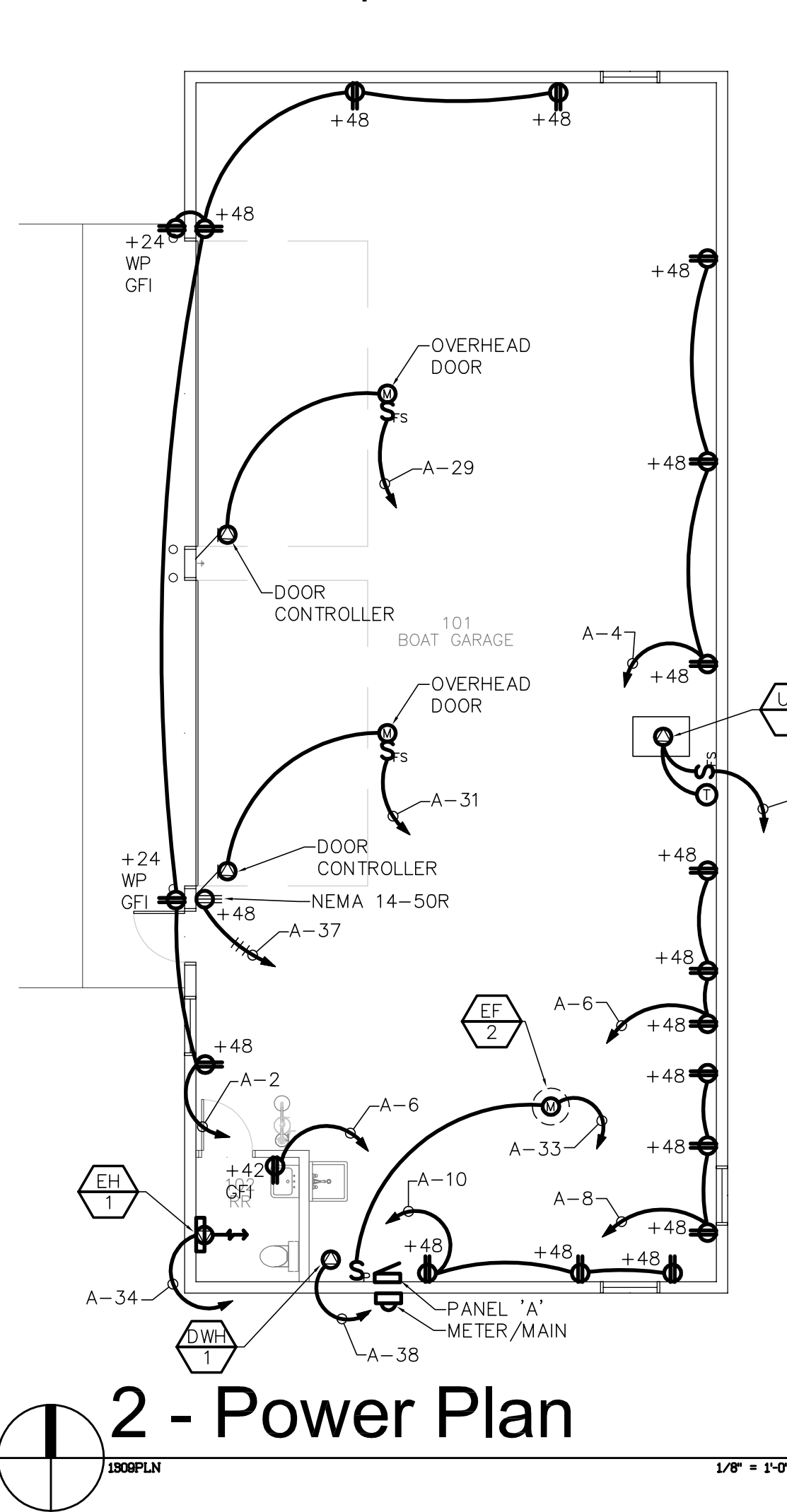
no scale

3



1 - Lighting Plan

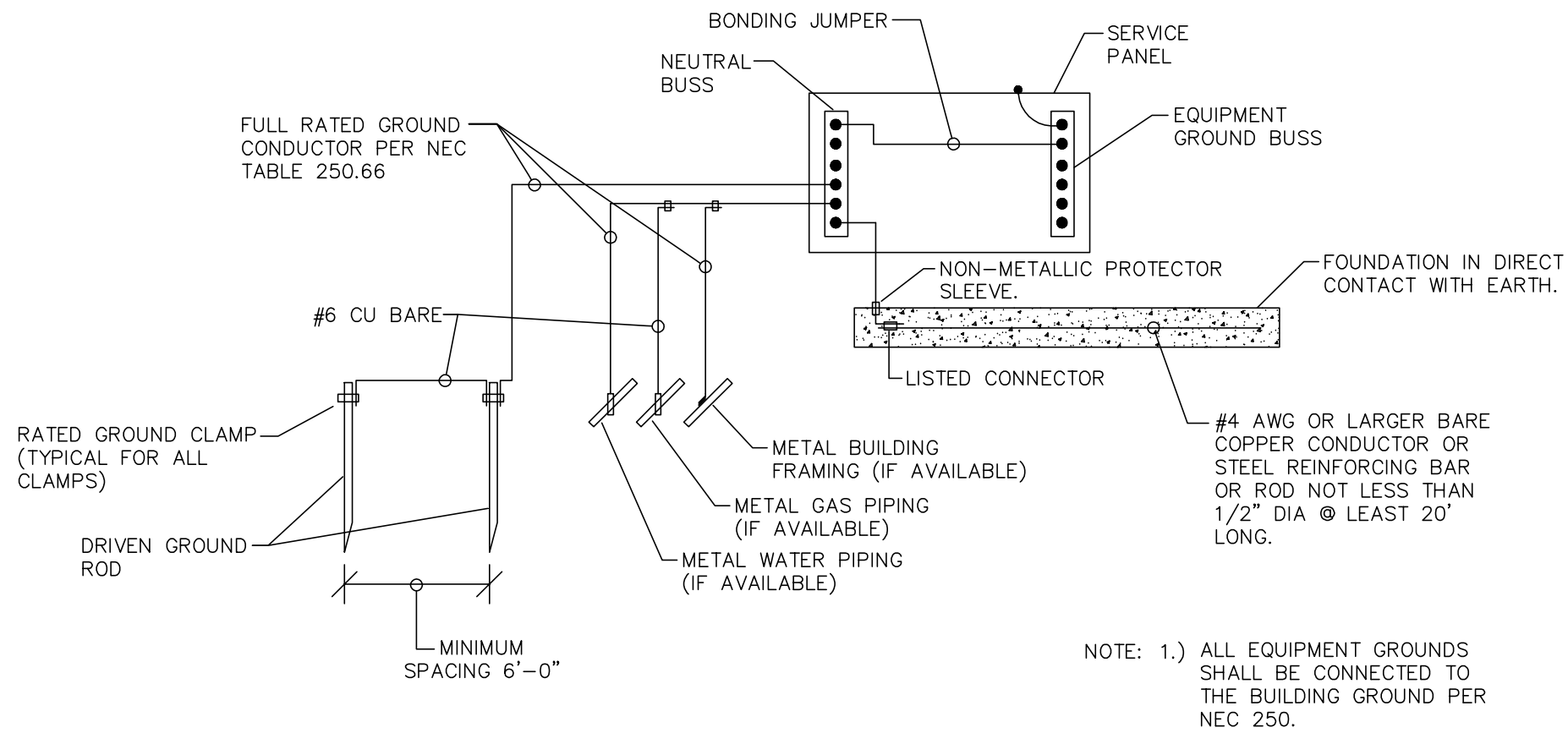
1/8" = 1'-0"



2 - Power Plan

1/8" = 1'-0"

GENERAL NOTES:
1.) ALL RECEPTACLES ARE TO BE 20 AMP GFI IN BOAT GARAGE.



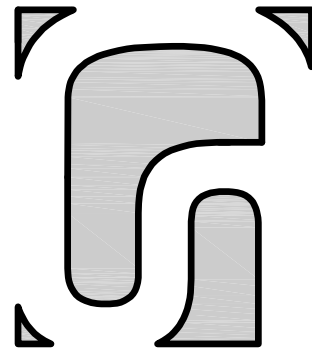
NOTE: 1.) ALL EQUIPMENT GROUNDS SHALL BE CONNECTED TO THE BUILDING GROUND PER NEC 250.

4 - Service Grounding Detail

no scale

4

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Revisions

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**ELECTRICAL
PLANS &
DETAILS**

E1.1